

REMARKS

The application includes claims 1-70 of which claims 1, 48, 53, 55 are independent claims. Claims 53 and 54 are allowed, claims 25, 29-40, 46-47, 50-52 and 60-70 are objected to, claims 1-24, 26-28, 41-45, 48-49 and 55-59 are rejected. Claims 1 and 55 are amended.

The response refers primarily to the independent claims, the allowance of the dependent claims should follow at least for the reason of being dependent on an independent claim that is allowable.

In paragraph 3 the Examiner requests submitting an abstract. Applicant respectfully submits that an abstract on a separate page is not required in a national stage PCT application (see MPEP §1893.03(e)). As indicated in the last paragraph of the section titled "THE PAMPHLET", the abstract printed on the front page of the pamphlet is used in a US Patent that results from the application and it is improper to require an abstract on a separate piece of paper. Withdrawal of the requirement is respectfully requested.

In paragraph 4 the Examiner states that claims 1-47, 56-57 and 64-65 are rejected under 35 U.S.C. 112 as being indefinite for failing to point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended claims 1 and 55 to include the term "penalty function" and some rewording. The word "function" was obviously omitted. As pointed out by the Examiner the dependent claims refer to a "penalty function" and not a "penalty". Applicant respectfully submits that the amendments to these claims are purely cosmetic and do not affect the breadth of the claims, in that these amendments merely made explicit that which was previously implicit.

In paragraph 4 the Examiner additionally states that the term "penalty" is vague and indefinite. Applicant respectfully disagrees. The term "penalty" is used in the application, for example on page 17 lines 19-22, as referring to the penalty value provided by the penalty function. The term "penalty function" is a term used in the art, for example in the book "Nonlinear Programming" ISBN 0471557935 from 1993. Attached herewith is a copy of relevant pages from the book, for example chapter 9 section 9.1, which explains the concept of penalty functions and their usage for solving problems with constraints.

In paragraph 6 the Examiner states that claims 1-24, 26-28, 41-45, 48-49 and 55-59 are rejected under 35 U.S.C. 102(b) as being anticipated by Lorensen et al (US patent 5,611,025). Applicant respectfully disagrees. Regarding independent claims 1 and 55 the Examiner has not shown a prima facie case of anticipation since these claims at least have the limitation of "a penalty" or "penalty function" (as amended). In contrast Lorensen describes a method of steepest

descent, wherein the points are pre-marked based on distance from the endpoint and an optimal path is sought (col. 4, lines 49 - col. 5 line 5). In the book quoted above chapter 8 section 8.6 (a copy of which is attached herewith), there is described the method of steepest descent. Penalty functions are different and are described as such in chapter 9. Applicant respectfully submits for the record, that it would not be obvious to use penalty functions instead of using steepest descent since this would complicate the calculations.

Regarding independent claim 48 the Examiner has not shown a prima facie case of anticipation since this claim at least has the limitation of "wherein said path does not remain substantially in a medial axis of the cavity and does not approach closer than a predetermined distance to said boundary, in at least two of said bends." As explained above Lorensen uses an unconstrained optimization and does not describe or suggest a method of putting constraints on the path to assure such limitations.

The patentability of the dependent claims follows at least for the reason of being dependent on an independent claim that is allowable.

Applicant thanks the Examiner for indicating claims 25, 29-40, 46-47, 50-54 and 60-70 as allowable.

In addition, applicant respectfully points out that an Information Disclosure Statement was filed together with the application on August 21, 2000, as well as on September 25, 2000. However, the PTO-1449 forms were never returned to us initialed by the Examiner. Applicant is resubmitting the form and respectfully requests that the items listed thereon be initialed by the Examiner to ensure that they appear on the face of the patent issuing on the present application. Applicant assumes that the art has already been considered by the Examiner in accordance with MPEP 609.

In view of the above remarks and amendments applicant believes the application is now ready for allowance. A notice to that effect is respectfully awaited. If however the Examiner is unable to agree that the claims are all patentable, he is respectfully requested to contact Maier Fenster at toll free 1-877-428-5468. This number connects directly to our office in Israel. Please note that Israel is 7 hours ahead of Washington and that our work week is Sunday-Thursday.

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Respectfully submitted,
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